

SECTION C: TRAFFIC CONTROL PLANS

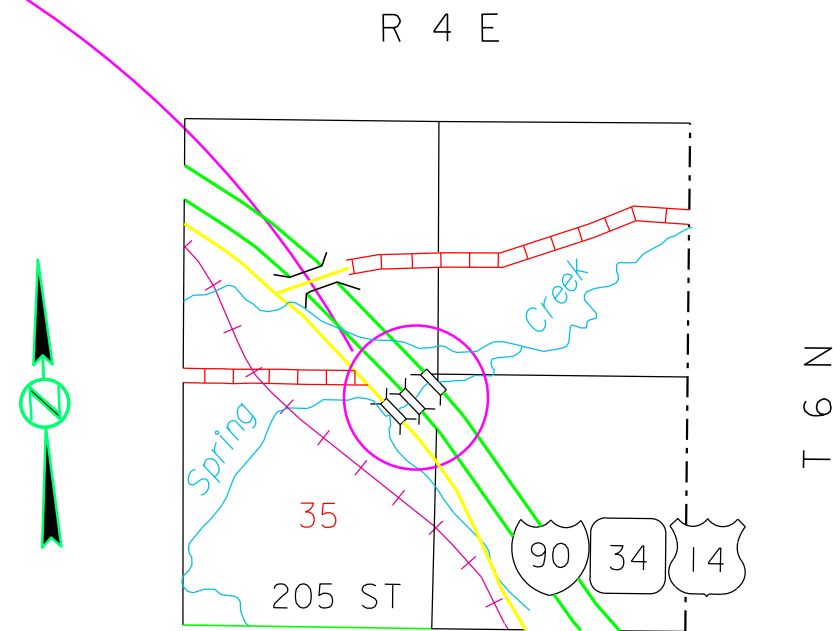
SD DOT	PROJECT	SECTION	SHEET
	IM 0901(202)26	C	1/10

Plotting Date: 10/16/2024

INDEX OF SHEETS

C1	General Layout with Index
C2-C4	Estimate With General Notes & Tables
C5-C7	Traffic Control Layouts
C8-C10	Standard Plates

PROJECT
I90E & I90W
Str. No. 41-229-112
Str. No. 41-229-111
MRM 26.74



SECTION C ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	200.0	Hour
634E0110	Traffic Control Signs	587.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0525	Linear Delineation System Panel, Barrier Mounted	23	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	4,600	Ft
634E0640	Temporary Pavement Marking	12,240	Ft
634E0700	Traffic Control Movable Concrete Barrier	224	Each
634E0750	Temporary Concrete Barrier End Protection	2	Each
634E0755	Remove and Reset Temporary Concrete Barrier End Protection	2	Each
634E0760	Temporary Concrete Barrier End Protection Module Set or Repair Kit	2	Each
634E1002	Detour and Restriction Signing	1,124.6	SqFt

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

Str. No. 41-229-111 – I-90 Westbound – MRM 26.74

Str. No. 41-229-112 – I-90 Eastbound – MRM 26.74

- Use Standard Plate No.'s 634.63 & 634.65 to complete work at these structures.
- Shoulder strengthening will be completed on one shoulder prior to starting any bridge work. Traffic will be on that shoulder when starting the bridge work.
 - First complete shoulder strengthening work in the passing lane with traffic in the driving lane.
 - Then complete all work (shoulder strengthening, bridge work, etc.) in the driving lane with traffic in the passing lane.
 - Then complete the remaining work to be done in the passing lane with traffic in the driving lane.
- There are enough traffic units and arrow panels for two lane closures on I-90, one in each direction.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

If inappropriate or conflicting pavement markings exist, the markings will be removed and replaced with applicable temporary pavement markings when the work duration is more than 3 days. When the work duration is less than 3 days, the channelizing devices in the area where the pavement markings conflict will be placed at one-half of the normal channelizing device spacing. Pavement marking removals will be incidental to the contract unit price per foot for "Remove Pavement Marking, 4" or equivalent". Temporary pavement marking will be paid for at the contract unit price per mile/foot for "Temporary Pavement Marking". The additional channelizing devices will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans.

A lane closure extension from MRM 26.5 to MRM 24 may be necessary. Coordination with PCN 07D3 may be necessary to ensure there at least 3 miles between each project lane closure, or one long closure.

LANE CLOSURES

The length of lane closures for structure work on interstate should be limited to one structure or 1 mile. Structures should be done separately unless they are within 2 miles of another structure.

Interstate lane closures will be removed when work will not be occurring for a period of 3 or more calendar days. Activities that do not involve workers being present, such as curing time for concrete, constitute work. Lane closures will not be set up on a Friday if no work will be occurring on Saturday or Sunday. In these cases, the lane closure will be installed on Monday.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0901(202)26	C2	C10

Revised 10/29/2024 - EJ

OVERWIDTH RESTRICTION AND DETOUR SIGNING

The Contractor will furnish and install the overwidth restriction and detour signs as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Overwidth restriction and detour signs will be installed on fixed location, ground mounted, breakaway supports. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor will remove the overwidth restriction and detour signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the overwidth restriction and detour signs will be incidental to the contract unit price per square foot for "Detour and Restriction Signing".

WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63.

To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

During shoulder strengthening, speed limit will be reduced to 45mph. Once temporary barriers are installed, speed limit will be increased to 65mph in the work zone.

TEMPORARY PAVEMENT MARKING

Temporary Flexible Vertical Markers (Tabs) will be used on the top lift of asphalt surfacing for centerline delineation, lane lines, skips, and as directed by the Engineer. Tabs will be offset 6-inches from the location shown for permanent pavement markings. Centerline will be double yellow lines with tabs spaced at 5' the entire project length.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Temporary pavement marking paint will not be allowed on the final lift of asphalt surfacing. Temporary pavement marking paint will not be allowed on the chip seal, fog seal, or flush seal. Temporary flexible vertical markers (tabs) must be used on the final lift of asphalt surfacing. The Contractor may use tabs with covers, uncovering them for the chip seal, fog seal, or flush seal. As an alternative, the Contractor may install new tabs for the fog seal or flush seal.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0901(202)26	C3	C10

Revised 10/29/2024 - EJ

TEMPORARY PAVEMENT MARKING (continued)

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

Total tabs used will be 12240'. This includes 960' taper, 480' shift, 1000' shoulder strengthening, 140' bridge, and 480' shift.

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGN

One week prior to starting work affecting the traveling public, portable changeable message signs (PCMS) will be installed to notify drivers of the upcoming construction. The Engineer will assist in determining the location and messages to be programmed into the message sign.

When work begins that will affect traffic patterns, the Contractor will re-program the PCMS with new messages as determined by the Engineer.

INCIDENTS

An incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic such as a crash, hazardous materials spill, or other event.

The Contractor will set up a meeting prior to start of work to plan and coordinate responses to an incident. The Contractor will invite the Department of Transportation, the South Dakota Highway Patrol, the Lawrence County Sheriff and local emergency response entities to the meeting.

The Contractor will assist to maintain traffic as required by these plan notes and as agreed to at that meeting.

Emergency vehicle access through the project will be considered and discussed at the meeting.

The Contractor may be required to modify messages on portable changeable message signs or relocate portable changeable message signs, and to provide flaggers to direct or detour traffic. The Contractor should be prepared to relocate advance warning signs if determined to be necessary for a major traffic incident lasting more than two hours. Fixed location ground mounted signs may be covered and additional portable signs provided.

No additional payment will be made for the modification of portable changeable message sign messages or the relocation of portable changeable message signs. Cost for the relocation of an advance warning sign due to an incident will be 50% of the designated sign rate. Flaggers will be paid for at the contract unit price per hour for "Flagging".

PRESS RELEASE ANNOUNCEMENTS

The SDDOT will prepare a press release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS

Concrete barriers will be provided by the State and are available for pickup from the SDDOT Rapid City Maintenance Yard located at Highway 79. The barriers will be hauled back to the SDDOT Rapid City Maintenance Yard when they are no longer needed on the project.

Barriers to be adjusted or moved will be disconnected from adjacent barriers to minimize damage to connecting pins. Pins damaged by the Contractor will be replaced at no cost to the Department.

Concrete barrier sections will be placed as depicted in the plans to comply with clear zone requirements and as required by the Engineer. The barriers will be pinned and bolted together as directed by the Engineer.

All costs associated with picking the barriers up from the SDDOT Maintenance Yard, transporting, setting, connecting, and hauling them back to the SDDOT Maintenance Yard will be incidental to the contract unit price per each for Traffic Control Movable Concrete Barrier.

After the initial placement, the concrete barriers may need to be adjusted. Adjustment of the barriers, where they do not need to be loaded on a truck for transport, will be incidental to the contract unit price per each for Traffic Control Movable Concrete Barrier. All costs associated with removing, loading, unloading, and resetting of the barriers at a new site, will be incidental to the contract unit price per each for Remove and Reset Traffic Control Movable Concrete Barrier. No additional payment will be made for barriers that are not immediately reset at a new location on the project and stored on-site until they are either reset on the project or returned to the SDDOT as indicated in these plans.

TEMPORARY CONCRETE BARRIER END PROTECTION

Crash attenuators meeting the requirements of NCHRP 350 or MASH TL-3 will be furnished and installed by the Contractor. Attachment of the attenuators to the concrete barriers will be by approved methods.

All costs associated with furnishing, transporting, initial setup, connecting, maintaining, and removing the crash attenuators will be incidental to the contract unit price per each for Temporary Concrete Barrier End Protection.

All costs associated with moving and resetting crash attenuators to accommodate traffic flows after initial set-up will be paid for at the contract unit price per each for Remove & Reset Temporary Concrete Barrier End Protection. No additional payment will be made for crash attenuators that are not immediately reset at a new location on the project and stored on-site until they are either reset or removed from the project as determined by the Engineer. No additional payment will be made for minor adjustments.

The Contractor will have replacement hardware available so that in the event the crash attenuator is hit and made unusable, the crash attenuator can be made functional within 24 hours. The cost of replacement will be incidental to the contract unit price per each for Temporary Concrete Barrier Module Set or Repair Kit. No payment will be made for the Temporary Concrete Barrier Module Set or Repair Kit if no repairs are necessary. Upon completion of the project, crash attenuators will remain the property of the Contractor.

BARRIER MOUNTED LINEAR DELINEATION SYSTEM PANELS

A linear delineation system (LDS) panel will be attached to each barrier section. The color will be the same as the nearest pavement marking, white along outside edge lines or yellow for the left side on one way traffic sections. The LDS will be 34 inches long and 6 inches in height and be constructed of

aluminum formed into a shape to provide retroreflective properties across a wide range of angles. It will be sheeted with sheeting meeting the requirements of ASTM D4956 Type XI. The panels will be evenly spaced, with the top of the panel 4 inches below the top of the barrier. Installation will be as per the manufacturer's recommendations. This will allow for easy removal for replacement of damaged panels or to replace with an alternate color. The Contractor will furnish and install one panel along each side of the barrier if any panels are missing from the barriers. Replacement of damaged linear delineation system panels will be furnished and replaced by the Contractor. All costs associated with furnishing, installing, and replacing, if needed, will be incidental to the contract unit price per each for Linear Delineation System Panel, Barrier Mounted.

All LDS panels will remain attached to the barrier sections and will become the property of the State of South Dakota upon completion of the project.

The Contractor will verify the number of LDS panels that will need to be installed or replaced on the Traffic Control Movable Concrete Barriers. The contract amount of LDS panels is an estimate, and the full contract amount may not be needed.

Maintaining the linear delineation system, including moving LDS panels from one side of the barrier to the other side of the barrier to match the applicable color of the nearest pavement marking will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

REMOVE PAVEMENT MARKING 4" OR EQUIVALENT

All pavement marking paint removals shall be done as directed by the Engineer.

Edge lines = 1140' x 4 edge lines
Total = 4600'

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT _65_	6	24" x 30"	5.0	30.0
R2-1	SPEED LIMIT _75_	2	24" x 30"	5.0	10.0
R2-1	SPEED LIMIT _45_	4	24" x 30"	5.0	20.0
R2-6aP	FINES DOUBLE (plaque)	2	24" x 18"	3.0	6.0
W3-5	SPEED REDUCTION AHEAD (_65_ MPH)	4	48" x 48"	16.0	64.0
W3-5	SPEED REDUCTION AHEAD (_45_ MPH)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	8	48" x 48"	16.0	128.0
W20-1	ROAD WORK AHEAD	8	48" x 48"	16.0	128.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	8	48" x 48"	16.0	128.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					587.0

ITEMIZED LIST FOR OVERWIDTH RESTRICTION AND DETOUR SIGNING

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0901(202)26	C4	C10

Revised 10/29/2024 - EJ

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R5-5C?	NO VEHICLES OVER 12 FT WIDE	2	138" x 42"	40.3	80.6
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
M1-1	INTERSTATE ROUTE MARKER (2 digits)	10	24" x 24"	4.0	40.0
M3-2	DIRECTION MARKER - EAST	5	24" x 12"	2.0	10.0
M3-4	DIRECTION MARKER - WEST	5	24" x 12"	2.0	10.0
M5-1	ADVANCE TURN ARROW 90° (L or R)	4	21" x 15"	2.2	8.8
M6-1	DIRECTION ARROW - Horizontal Single Head (L or R)	6	21" x 15"	2.2	13.2
SPECIAL	OVERWIDTH VEHICLES	10	42" x 42"	12.3	123.0
SPECIAL	WIDTH RESTRICTION 12 FT MAX XX MLES AHEAD	2	144" x 126"	126.0	252.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 1124.6			

TRAFFIC CONTROL OVERWIDTH DETOUR LAYOUT

Revised by EJ - 10/01/24

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0901(202)26	C5	C10
Plotting Date:		10/01/2024	

Plot Scale - 1:40


Plotted From - TRR011638

File - ...Overwidth Detour.dgn

- SPECIAL (42"X24")


OVERWIDTH VEHICLES ②

M5-1 (21"X15")




- OVERWIDTH VEHICLES ③

M3-4 (24"X12")




M6-1 (21"X15")




- OVERWIDTH VEHICLES ④


M3-2 (24"X12")



M1-1 (24"X30")




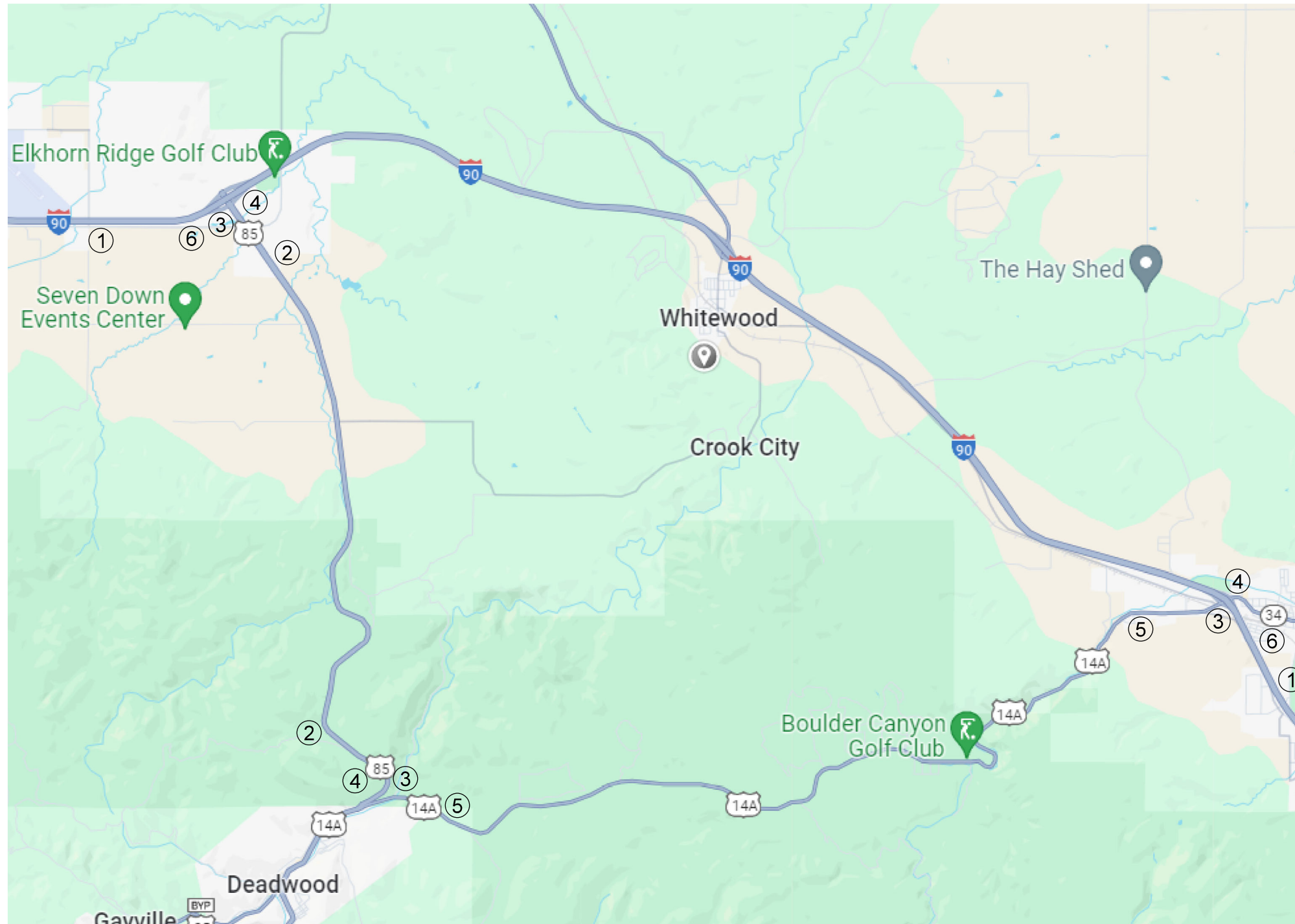
M6-1 (21"X15")



- OVERWIDTH VEHICLES ⑤

M5-1 (21"X15")





①

WIDTH RESTRICTION

XX FT MAX

90 XXXX

XX MILES AHEAD

USE EXIT XX

SPECIAL (144"X126")

⑥

**NO VEHICLES
OVER XX FT WIDE**

SPECIAL (138"X42")

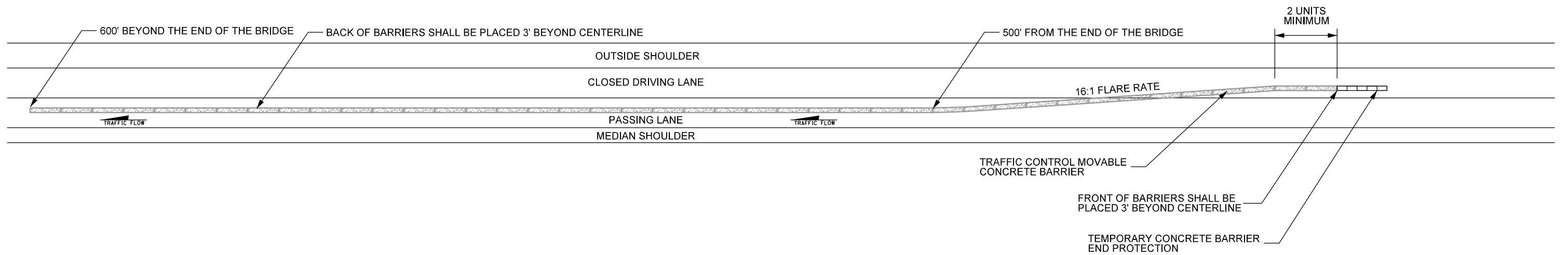
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0901(202)26	C7	C10

Plotting Date: 10/01/2024

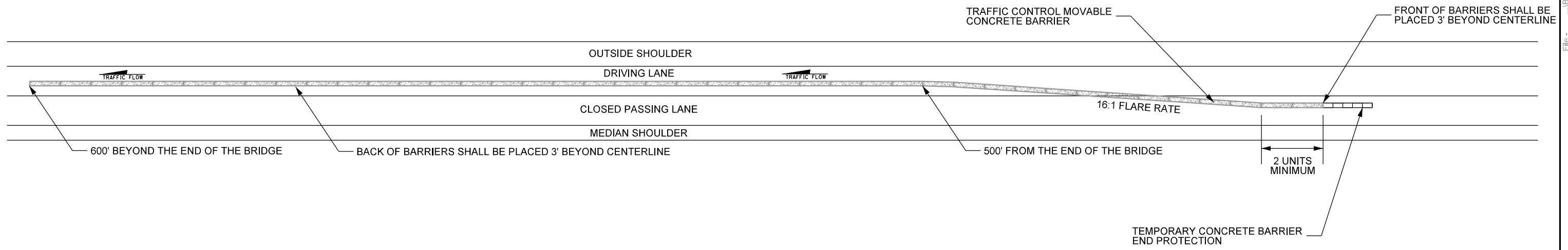
TRAFFIC CONTROL

MOVABLE CONCRETE BARRIER LAYOUT

CLOSED DRIVING LANE & OUTSIDE SHOULDER (TYPICAL)



CLOSED PASSING LANE & MEDIAN SHOULDER (TYPICAL)



NOTE: EXISTING PAVEMENT MARKINGS SHALL BE REMOVED ADJACENT TO THE BARRIERS.
 TEMPORARY FLEXIBLE VERTICAL MARKERS SHALL BE USED TO DELINEATE NEW EDGELINES.

Plot Scale - 1:40

Plotted From - TRR011638

File - ...Barrier Typical.dgn

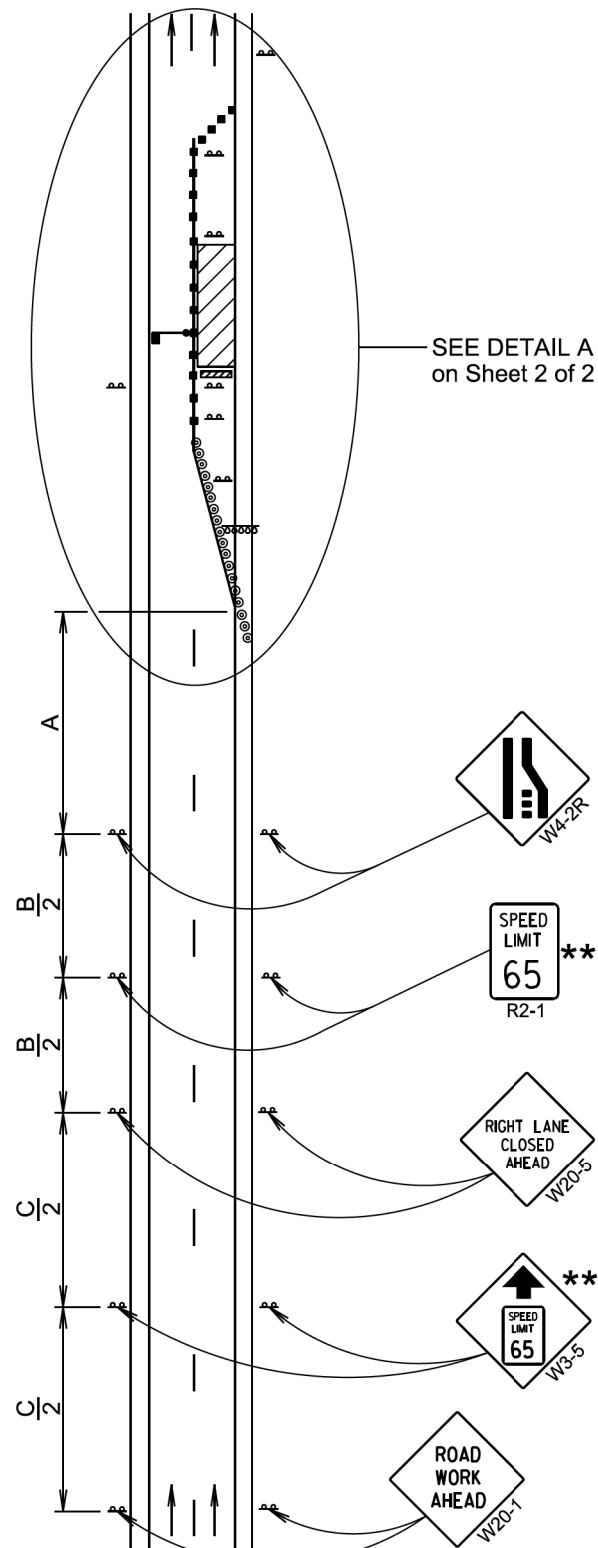
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)		
	(A)	(B)	(C)
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
70 - 80	1000	1500	2640

** Speed appropriate for location.

- ⊙ Reflectorized Drum
- Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.



SEE DETAIL A on Sheet 2 of 2

September 22, 2021

Published Date: 2025

S
D
D
O
T

**WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS**

PLATE NUMBER
634.63

Sheet 1 of 2

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 - 30	25	180
35 - 40	25	320
45	25	600
50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

● Flagger (As Necessary)

⊙ Reflectorized Drum

■ Channelizing Device

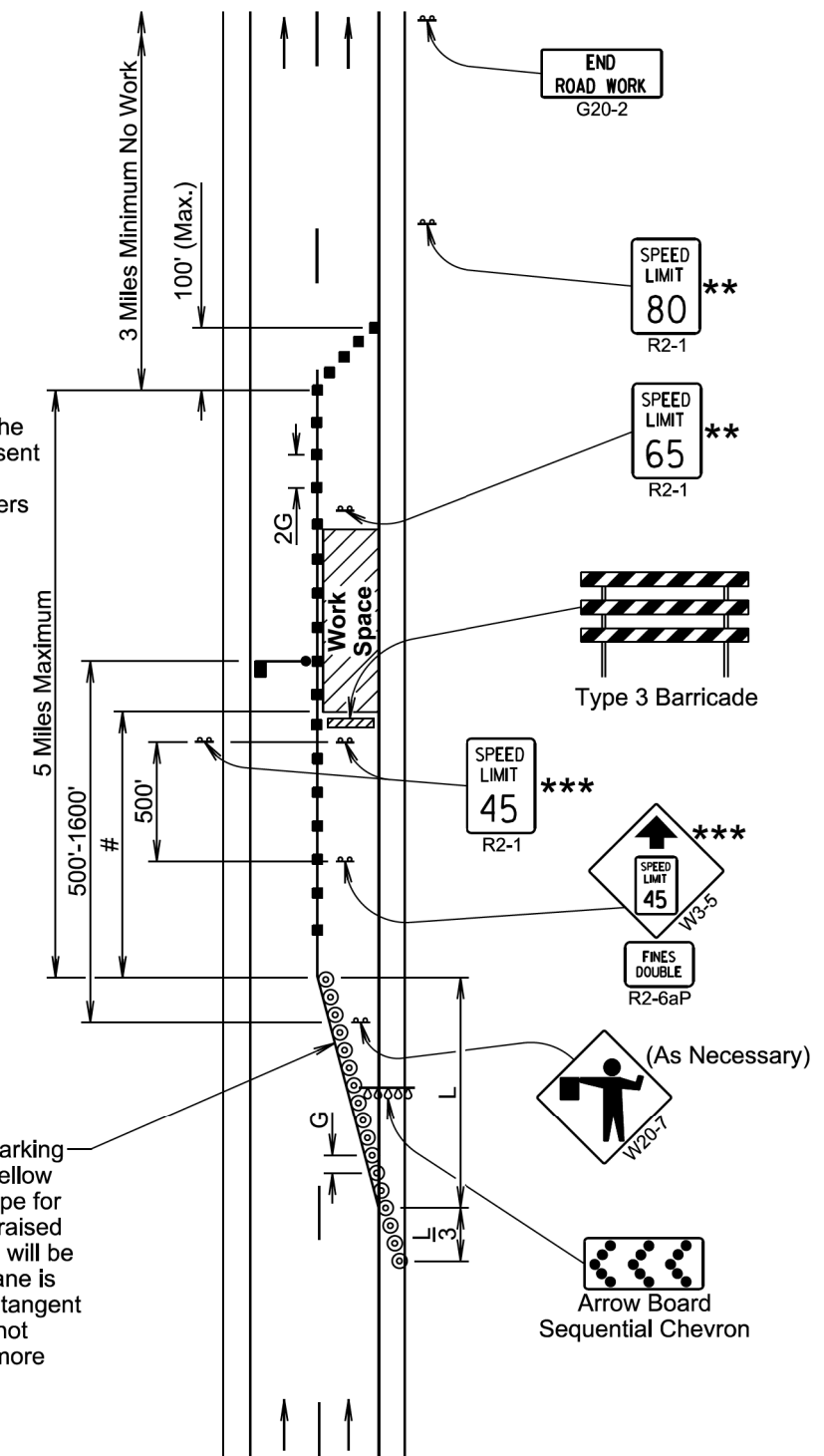
The Work Space will be a minimum of 500' from the end of the taper.

The FLAGGER sign will be used whenever there is a Flagger present.

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



DETAIL A

September 22, 2021

Published Date: 2025

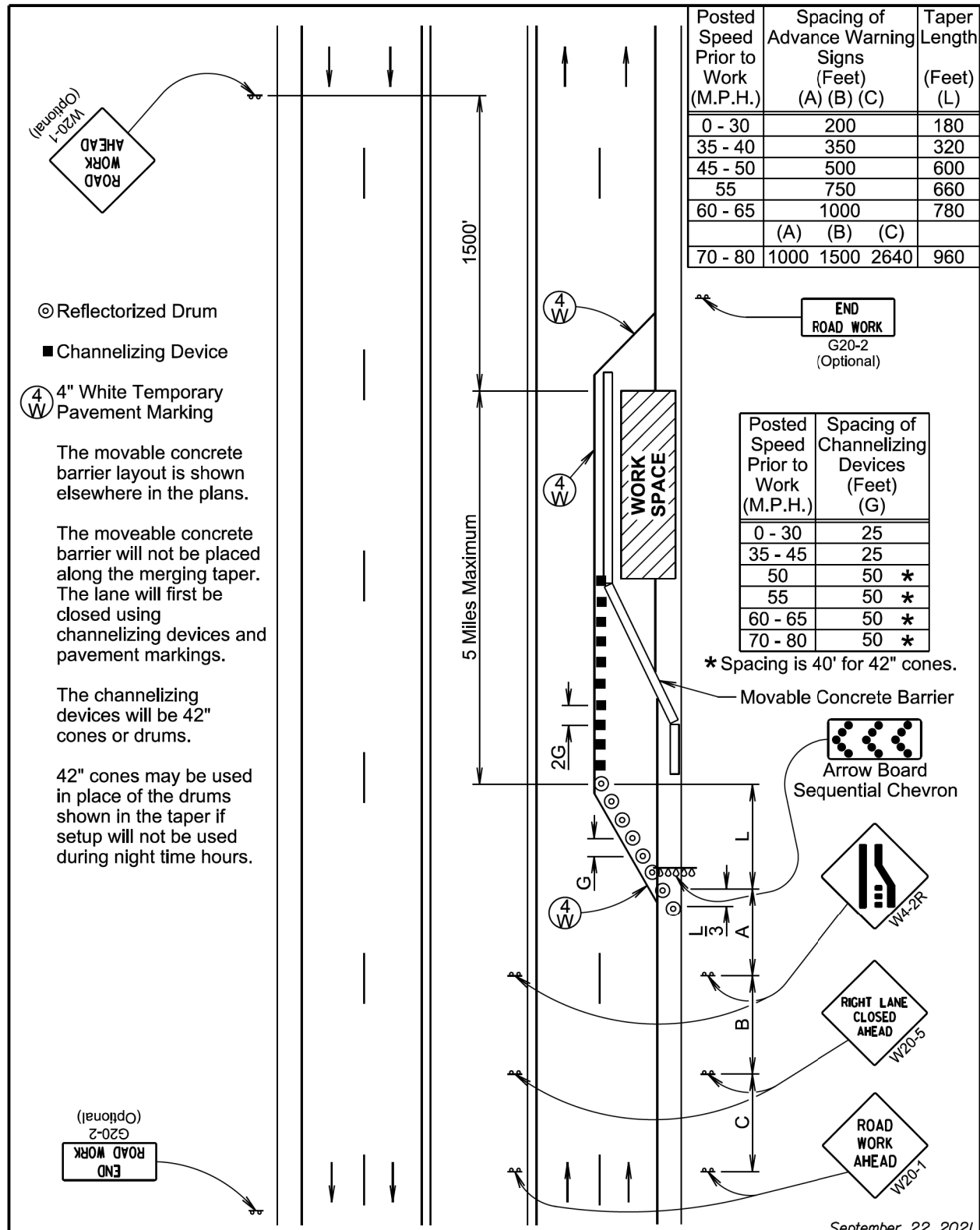
S
D
D
O
T

**WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS**

PLATE NUMBER
634.63

Sheet 2 of 2

Plot Scale - 1:200



● Reflectorized Drum
 ■ Channelizing Device
 (4 W) 4" White Temporary Pavement Marking

The movable concrete barrier layout is shown elsewhere in the plans.

The moveable concrete barrier will not be placed along the merging taper. The lane will first be closed using channelizing devices and pavement markings.

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

Published Date: 2025

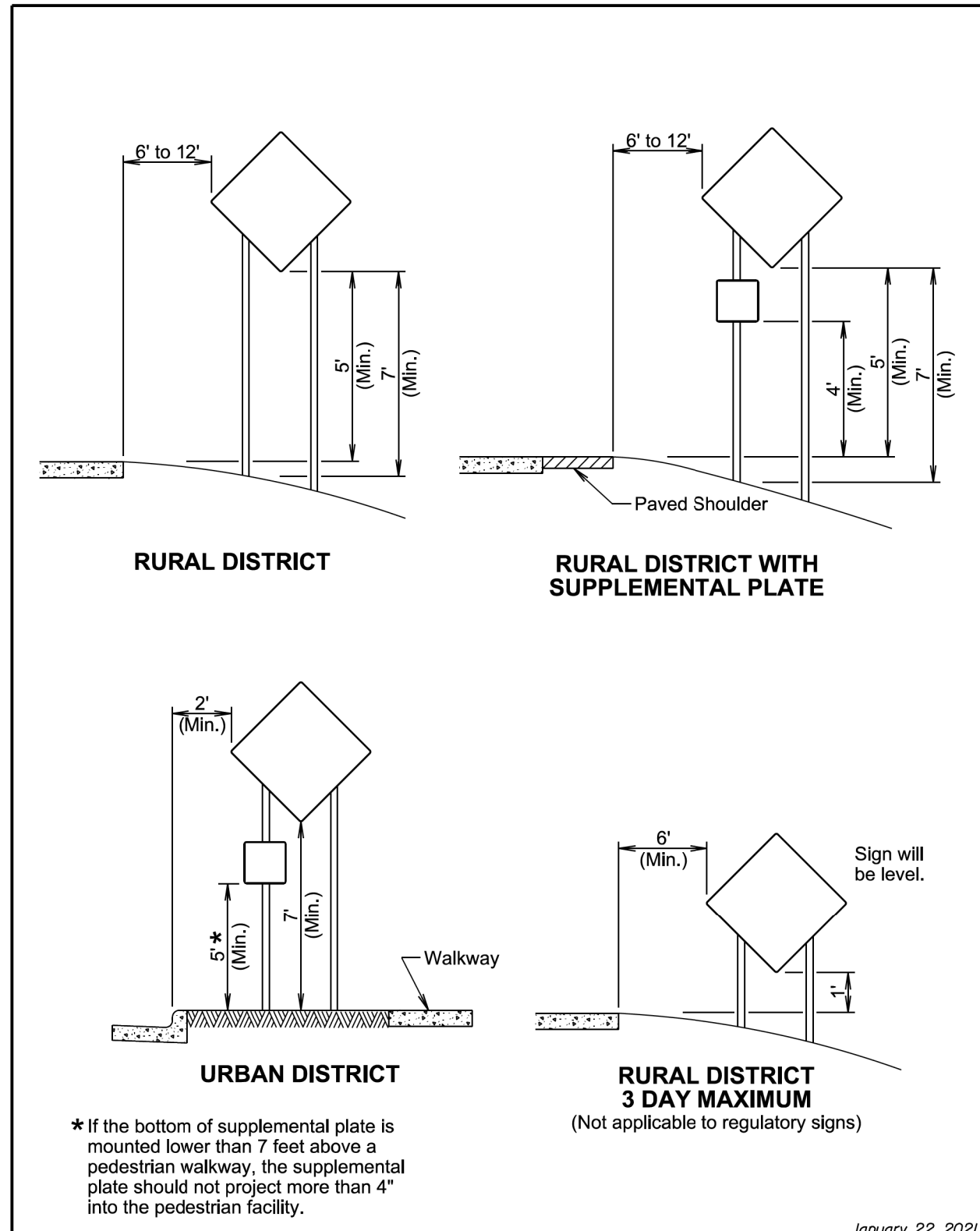
SDDOT

LANE CLOSURE WITH BARRIER

PLATE NUMBER 634.65

Sheet 1 of 1

September 22, 2021



Published Date: 2025

SDDOT

CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)

PLATE NUMBER 634.85

Sheet 1 of 1

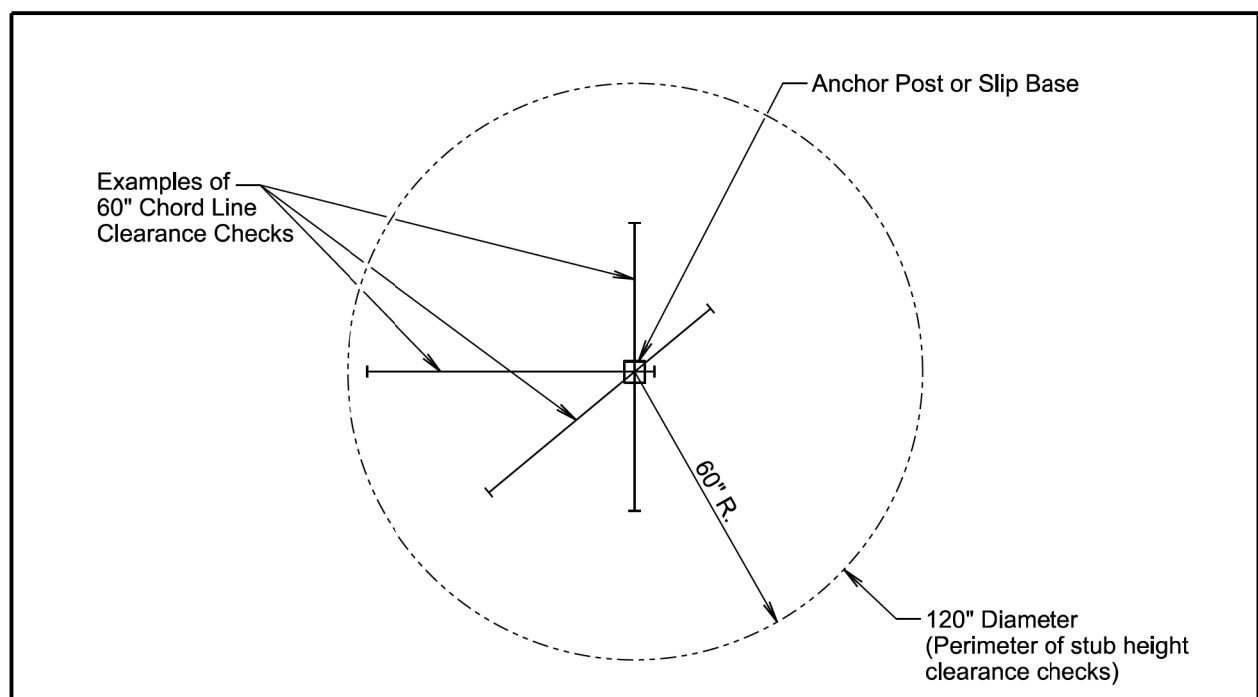
January 22, 2021

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

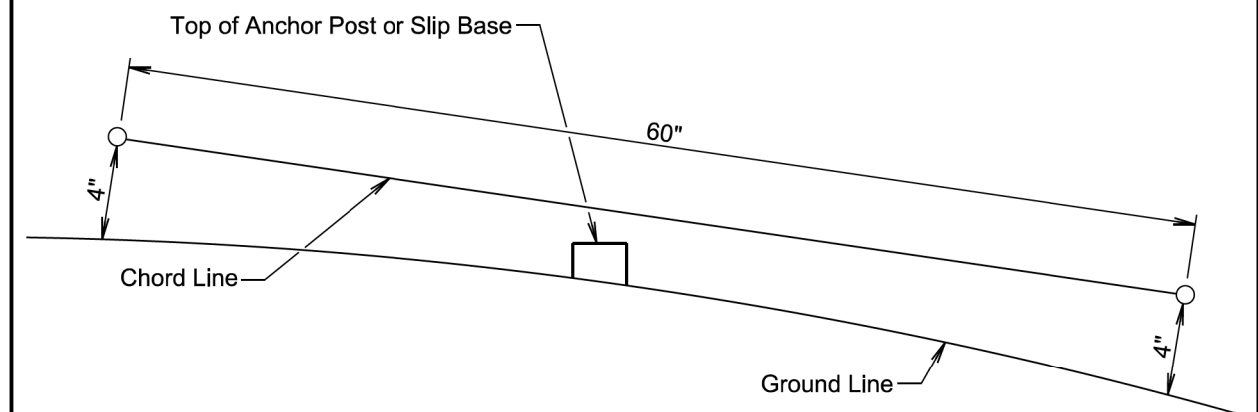
Plotted From: TRRC12608

File: ...Traffic Control634_2.dgn

Plot Scale - 1:200



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
		Sheet 1 of 1

Published Date: 2025

- Plotted From - TRRC12608

File - ...Traffic Control1634_3.dgn